TECHNICAL MANUAL

FOR

SERIES 9334

"STANDARD RESISTORS"

INTRODUCTION

The Guildline 9334 series of Resistance Standards are designed as very high stability calibration laboratory standards for high accuracy resistance calibration in air, without the need for stabilization in a temperature controlled bath.

They can be used as working standards or highly reliable and rugged transportable transfer standards. They are extremely useful for the calibration of resistance ranges of multi-function calibrators and high accuracy digital multimeters, as well as being used in more classical standards and calibration laboratory applications.

The resistor elements are securely mounted and thermally bonded to the inside of a hermetically sealed aluminum enclosure. If necessary, the temperature of the enclosure may be monitored and a correction factor applied to the value of the resistance.

Maintenance of the resistor consists only of routinely inspecting the unit for physical damage and cleanliness. Cleanliness is especially important on the high value resistors. They should be cleaned with isopropanol and a soft brush or cloth. Special care should be taken to ensure the terminal insulators are clean.

SPECIFICATIONS FOR 4 TERMINAL RESISTORS

Model **9334**	Nominal Resistance Value(ohm)	Nominal Tolerance (±ppm)	Calibration Uncertainty @23°C (±ppm)	Stability		Temp.Coeff 18-28°C (±/°C)	Max Current (A)	Max Voltage (Volts)
				6 months (ppm)	12 months (ppm)			
/1	1.0	5.0	1.20	2.5	5.0	<0.3	316m	316m
/10	10.0	5.0	1.20	2.5	5.0	<0.3	100m	1
/19	19.0	5.0	1.20	2.5	5.0	<0.3	72m	1.38
/25	25.0	5.0	1.10	2.5	5.0	<0.3	63m	1.58
/50	50.0	5.0	1.10	2.5	5.0	<0.3	45m	2.24
/75	75.0	5.0	1.10	2.5	5.0	<0.3	36m	2.74
/100	100.0	5.0	1.00	2.5	5.0	<0.3	31.6	3.16
/190	190.0	5.0	1.00	2.5	5.0	<0.3	23m	4.36
/200	200.0	5.0	1.00	2.5	5.0	<0.3	22m	4.47
/300	300.0	5.0	1.00	2.5	5.0	<0.3	18m	5.48
/400	400.0	5.0	1.00	2.5	5.0	<0.3	16m	6.32
/1K	1.0 k	5.0	0.90	2.5	5.0	<0.3	10m	10
/1.9K	1.9 k	5.0	0.90	2.5	5.0	<0.3	7.2m	13.8
/6.4532K	6.4532 k	5.0	0.90	2.5	5.0	<0.3	3.9m	25.4
/10K	10.0 k	5.0	0.84	2.5	5.0	<0.3	3.16	31.6
/12.9064K	12.9064 k	5.0	0.84	2.5	5.0	<0.3	2.8m	35.9
/19K	19.0 k	5.0	0.84	2.5	5.0	<0.3	2.3m	43.6
/100K	100.0 k	15.0	4.00	3.0	6.0	<0.3	1m	100
/190K	190.0 k	15.0	4.00	3.0	6.0	<0.3	725µ	138
/1M	1.0 M	20.0	7	3.5	7.0	<0.3	316µ	316
/1.9M	1.9 M	20.0	7	3.5	7.0	<0.3	230µ	436

RETRACE ERROR: 23°C to 18°C to 23°C cycle:<0.1ppm/V
23°C to 28°C to 23°C cycle:<0.1ppm
23°C to 0°C to 23°C cycle:<0.5ppm
23°C to 40°C to 23°C cycle<0.5ppm
@ 3 times the Maximum Voltage (To 1000V)<0.1ppm shift all values up to 1MΩ.

SPECIFICATIONS FOR 2 TERMINAL RESISTORS

Model **9334**	Nominal Resistance Value(ohm)	Nominal Tolerance (±ppm)	Calibration Uncertainty @23°C (±ppm)	Stability		Temp.Coeff 18-28°C (±/°C)	Max Current (A)	Max Voltage (Volts)
				6 months (ppm)	12 months (ppm)			
/10M	10M	50.0	14	4.0	8.0	<5.0	100µ	1k
/19M	19M	50.0	14	4.0	8.0	<5.0	73µ	1.38k
/100M	100 M	100.0	21	13.0	25	<5.0	15µ	1.5k *Note 3*
/1G	1G	150.0	70	13.0	25	<6.0	1.5µ	1.5k *Note 1*
H/1G	1G	150.0	70	13.0	25.0	<6.0	1.5µ	1.5k *Note 1*
W/1G	1G	150.0	70	13.0	25.0	<6.0	1.5µ	1.5k *Note 1*
/10G	10G	250.0	125	50.0	100	<25	150n	1.5k *Note 2*
/100G	100G	1500.0	750	50.0	100	<250	15n	1.5k *Note 2*

Calibrated at 23°C, referred to the unit of resistance as maintained by the National Research Council of Canada or the National Institute of Standards and Technology. A Calibration report giving the measured value is provided with each Resistor.

NOTE 1: Maximum Current 1.5µA; Voltage Coefficient <0.5ppm/V

NOTE 2: Voltage Coefficient<1ppm/volt

NOTE 3: Maximum current 15µA; Voltage Coefficient<0.5ppm/V

GENERAL SPECIFICATIONS

Dimensions: **H 79 mm (3.1 in), W 124 mm (4.9 in)**

Weight: **0.5 kg (1.1 lbs)**

Environment: **Operating: 18°C to 28°C<70% rh**
28°C to 40°C<50% rh

Storage: **-20°C to 60°C, 15 to 80% rh**